ISSN (print) 0093-4666 © 2010. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

DOI: 10.5248/114.205

Volume 114, pp. 205–210 *October–December 2010*

Three new species of *Scytalidium* from soil

Yue-Ming Wu & Tian-Yu Zhang*

tyzhang1937@yahoo.com.cn
Department of Plant Pathology, Shandong Agricultural University
Taian, 271018, China

Abstract — Three new species of dematiaceous hyphomycetes from soil in China, *Scytalidium nielamuense, S. verruculosum,* and *S. xigazense,* are described and illustrated. The type specimens (dried cultures) and living cultures are deposited in the Herbarium of Shandong Agricultural University Plant Pathology (HSAUP). Isotypes are kept in the Herbarium of the Institute of Microbiology, Academia Sinica (HMAS).

Key words — taxonomy, soil fungi

Introduction

Since Pesante (1957) erected *Scytalidium* for *S. lignicola* Pesante, 22 species have been recognized worldwide (Index Fungorum 2010). This genus is characterized by dematiaceous, intercalary or terminal arthroconidia formed by fragmentation of undifferentiated hyphae. The arthroconidia are often thick-walled, smooth, occasionally verrucose in age, mid or dark brown, cylindrical, oblong, doliform or broadly ellipsoidal, often 0-septate, when septate with septa sometimes thick and very dark, often constricted at the septum; fission arthroconidia of a second type are hyaline, or pale to mid-brown, thin-walled, smooth, cylindrical, single-celled, truncate at each end. (Also refer to Ellis 1971.) During a recent survey of soil hyphomycetes in China, three new species of *Scytalidium* were found and are described below.

Taxonomic descriptions

Scytalidium nielamuense Y.M. Wu & T.Y. Zhang, **sp. nov**. Fig. 1

MycoBank MB 518543

Coloniae in PDA effusae, plus minusve radiatim sulcatae, crassae . Mycelium aerium et immersum. Vegetativae hyphae leaves, subhyalinae vel brunneolae, ramosae, septatae, inflates cellulis 1.5–2 µm latae. Fertiles hyphae laeves, hyalinae vel subhyalinae, septatae,

*Corresponding author: Tian-Yu Zhang

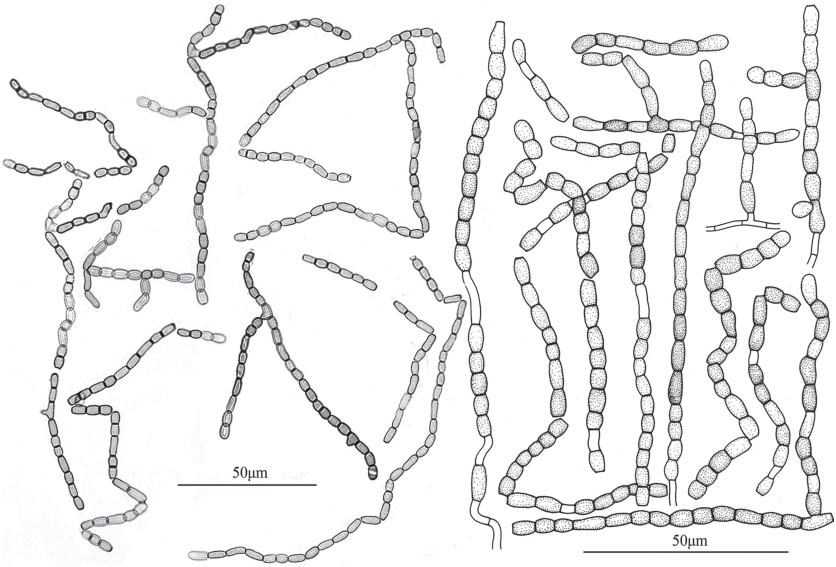

Fig. 1. Conidia and conidiogenous cells of *Scytalidium nielamuense* (ex holotype). Left: photomicrographs; right: drawings. (Bars = 50 μm).

schizolitice secedentibus arthroconidis. Conidia subhyalina vel flavo-brunnea, cylindracea, oblongo-elliptica vel doliformia, laevia, 0-septata, 3.8–7.5 × 2.5–3.8 μm.

Holotype: China, Tibet, Nielamu, from a grassland soil, altitude 2250 m, 14 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$1268, **holotype**; HMAS 196252, **isotype**.

Etymology: The epithet refers to the type location.

Colonies on PDA after two weeks at 25°C, effuse, growing slowly 2–3 cm diam., more or less radially folded, thick Mycelium partly superficial, partly immersed. Vegetative hyphae smooth, subhyaline to pale brown, branched, sparsely to regularly septate, sometimes slightly constricted at the septa, and often with individual cells rather variable in shape and slightly swollen, 1.5–2 μm wide; hyphae sometimes aggregating into strands. Fertile hyphae scarcely differentiated from vegetative hyphae, smooth, hyaline to subhyaline, with septa more closely spaced, fragmenting by schizolytic dehiscence to form arthroconidia. Conidia cylindrical to oblong-elliptical or doliform, vary in width depending on the parent hypha, subhyaline to yellow-brown, catenate, dry, simple, 0-septate, smooth, 3.8–7.5 × 2.5–3.8 μm.

This fungus somewhat resembles *Scytalidium vaccinii* Dalpé et al. (Dalpé et al. 1989) in conidial morphology. However, the latter has larger (7–14 × 3–4 μm), guttulate conidia, which remain connected in zigzag chains.

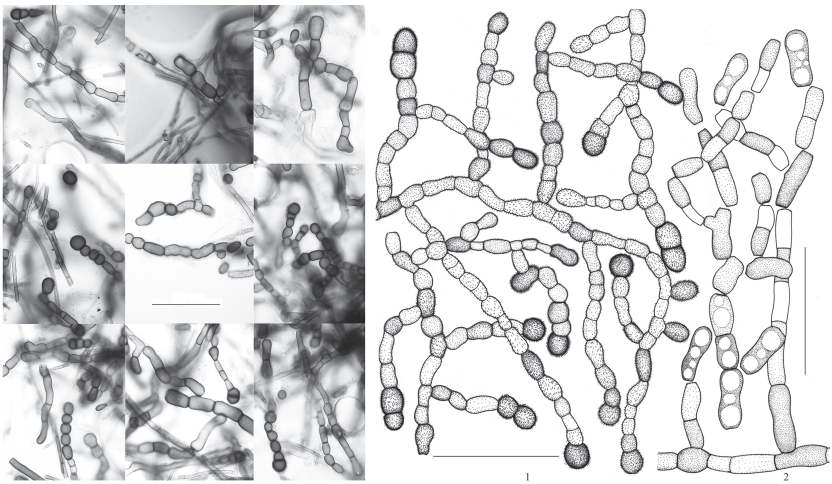

Fig. 2. Conidia and conidiogenous cells of *Scytalidium verruculosum* (ex holotype). Left: photomicrographs; right: drawings. (Bars = 50 μm).

Scytalidium verruculosum Y.M. Wu & T.Y. Zhang, **sp. nov.** Fig. 2

MycoBank MB 513017

Coloniae in PDA effusae. Mycelium partim superficiale et partim in substrato. Hyphae ramosae, septatae, subhyalinae vel pallide brunneae, 2–4 μm latae. Conidia biformis: (1) cylindracea, catenata, sicca, simplicia, 0–1-septata, brunnea, incrassata, verrucosa, utroque truncata, interdum clavata vel pyriformia, basi truncata et apice rotundata, aegre secedentes, 8–20 × 5–10 μm; (2) clavata vel pyriformia, cateenata, sicca, simplicia, 0-septata, pallide-brunnea, tenuia et laevia, basi truncata et apice rotundata, facile fragmentantia, 10–26.5 × 6–9 μm.

Holotype: China, Tibet, Zhangmu, from a mountain soil, altitude 2300 m, 14 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$1328, **holotype**; HMAS 196253, **isotype**.

Etymology: The epithet refers to the verrucose conidia of this species.

Colonies on PDA after two weeks at 25°C, effuse, growing very slowly, 2–3 cm diam., centre slightly raised, velvety, olivaceous brown. Mycelium partly superficial, partly immersed. Hyphae subhyaline to pale brown, smooth, septate, 2–4 μm thick, branched or unbranched. Conidia of two kinds: (1) cylindrical, catenate, dry, simple, 0–1-septate, medio-brown to dark brown, rough-walled, verrucose, truncate at both ends, sometimes clavate to pyriform, with a truncate base and rounded apex, not easily seceding, 8–20 × 5–10 μm; (2) clavate to pyriform, catenate, dry, simple, 0–catenate, dry, simple,1-septate, pale-brown, thin and smooth-walled, with a truncate base and rounded apex, seceding schizolytically and easily, 10–26.5 × 6–9 μm.

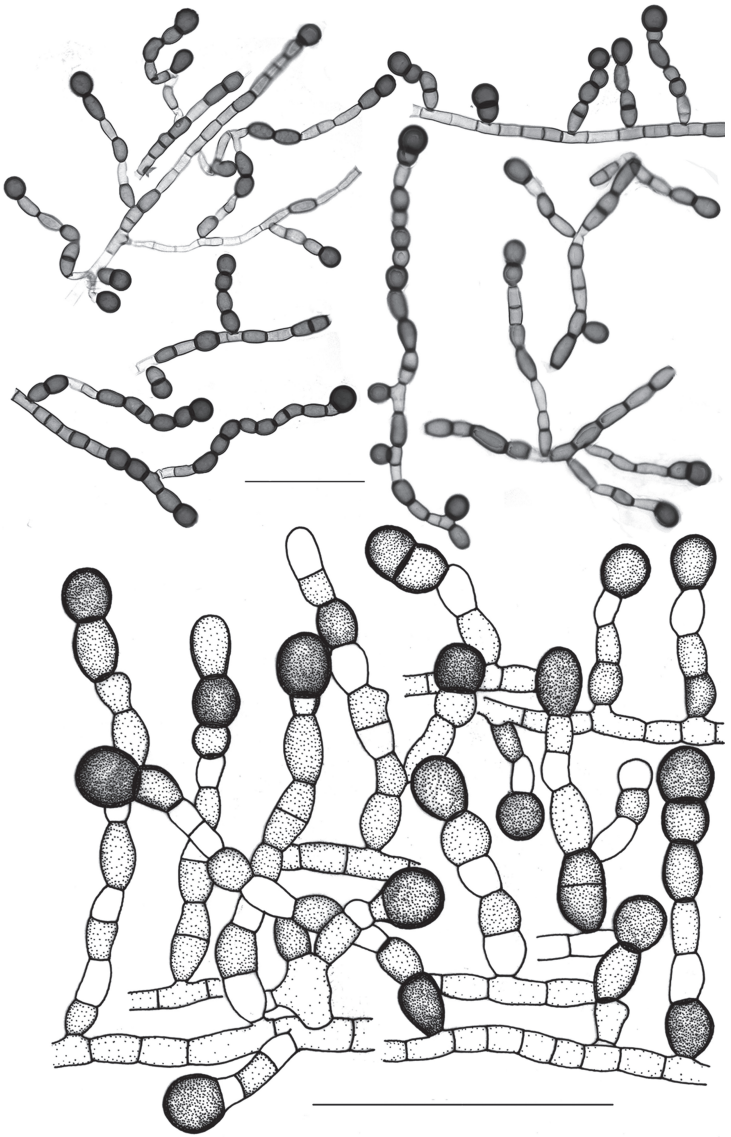

Fig. 3. Conidia and conidiogenous cells of *Scytalidium xigazense* (ex holotype) . Above: photomicrographs; below: drawings. (Bars = 50 μm).

This fungus somewhat resembles *Scytalidium infestans* Iwatsu et al. (Iwatsu et al. 1990) in conidial morphology. However, conidia of the latter are longer and narrower (4–30 × 2–4.5 μm), and rarely verrucose. *Scytalidium infestans* was described as a systemic pathogen of marine fish, whereas *S. verruculosum* is a soil fungus.

Scytalidium xigazense Y.M. Wu & T.Y. Zhang, **sp. nov.** FIG. 3

MYCOBANK MB 518397

Coloniae in PDA effusae. Mycelium partim superficiale et partim in substrato. Hyphae ramosa, septata, subhyalina vel pallide brunnea, 1–3 μm crassa. Conidia cylindracea, interdum clavata vel pyriformia, catenata, sicca, simplicia, 0–1-septata, subhyalina vel pallide brunnea, incrassata, laevia, utroque truncata, basi truncata et apice rotundata, 7–11 × 4–8 μm.

HOLOTYPE: China, Tibet, Xigaze, from a mountain soil, altitude 3700 m, 7 Sept. 2007, Y.M. Wu, HSAUPII$_{07}$0957, **holotype**; HMAS 196254, **isotype**.

ETYMOLOGY: The epithet refers to the type location.

Colonies on PDA after two weeks at 25°C, effuse, growing very slowly, 1.5–2.5 cm diam., centre slightly raised, velvety or floccose, olivaceous-gray. Mycelium partly superficial, partly immersed. Hyphae mostly subhyaline to pale brown, smooth, septate, 1–3 μm thick, branched. Conidia cylindrical, sometimes clavate to pyriform, vary in width depending on the parent hypha, catenate, dry, simple, 0–1-septate, subhyaline to brown, smooth, truncate at both ends, or with a truncate base and rounded apex, not easily seceding, 7–11 × 4–8 μm.

This fungus somewhat resembles *Scytalidium fulvum* Morgan-Jones & Gintis (Morgan-Jones et al. 1984) in conidial morphology. However, conidia of the latter are longer and narrower (12–14 × 2–3 μm).

Acknowledgments

The authors are grateful for pre-submission comments and suggestions provided by Dr. Eric McKenzie, Prof. Y.L. Guo, and Dr. Shaun Pennycook. This project was supported by the National Science Foundation of China (no. 30670014 & 30499340).

Literature cited

Dalpé Y, Litten W, Sigler L. 1989. *Scytalidium vaccinii* sp. nov., an ericoid endophyte of *Vaccinium angustifolium* roots. Mycotaxon 35: 371–377.

Ellis MB. 1971. Dematiaceous Hyphomycetes. CMI, Kew, Surrey, England. 608 p.

Index Fungorum. 2010. http://www.indexfungorum.org/Names/Names.asp; accessed 9 September 2010.

Iwatsu T, Udagawa S-i, Hatai K. 1990. *Scytalidium infestans* sp. nov., isolated from striped jack (*Pseudocaranx dentex*) as a causal agent of systemic mycosis. Trans. Mycol. Soc. Japan 31: 389–397.

Morgan-Jones G, Gintis BO, Rodriguez-Kabana R. 1984. New species of *Chalara* and *Scytalidium* isolated from cysts of *Heterodera glycines*. Mycologia, Bronx, 76: 211–217. doi: 10.2307/3793097

Pesante A. 1957. Osserazioni su una carie del platano. Ann. Sperim. Agric. 11(suppl.): 251–265.